

**EOSDIS IV&V**  
**Monthly Status Report**  
**For the Period 11/1/97 to 11/30/97**  
(Deliverable0201)

**December 15, 1997**

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## **1. PERFORMANCE INFORMATION**

### **1.1 Contract Organization Chart**

Exhibit 1-1 illustrates the current organizational structure of the EOSDIS IV&V team. The approximate number of personnel assigned to each technical task during November is also indicated.

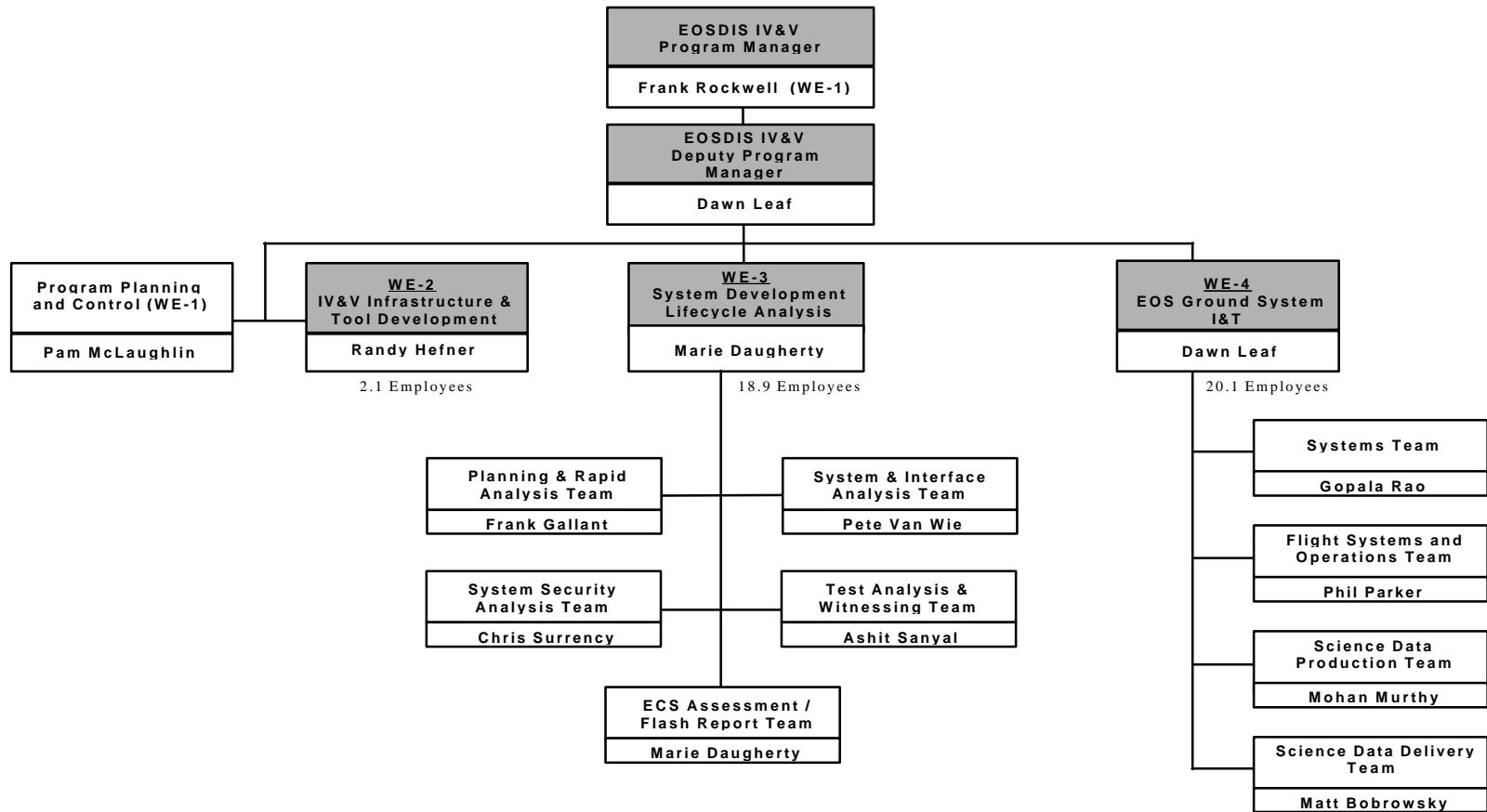
### **1.2 Programmatic Information**

#### **a) Key Recent Accomplishments**

- Submitted monthly 533 and Status Reports.
- Completed NASA 533 review meeting. Participants included NASA, Intermetrics, and subcontractors.
- Completed IV&V Findings Meeting.
- Ensured on-time delivery of contract deliverables as indicated in Exhibit 1-2.
- Completed Safesuite tool training of two engineers to support security related IV&V and EGS I&T tasks. In addition, individual training on various technical subjects was completed at the GSFC Learning Center and through Computer Based Training (CBT) classes which were provided by Intermetrics.

#### **b) Planned Activities**

- Continue individual training on various technical subjects at the GSFC Learning Center and through internal Intermetrics CBT classes.
- Continue tracking progress against the Master Milestone Chart as illustrated in Exhibit 1-3.



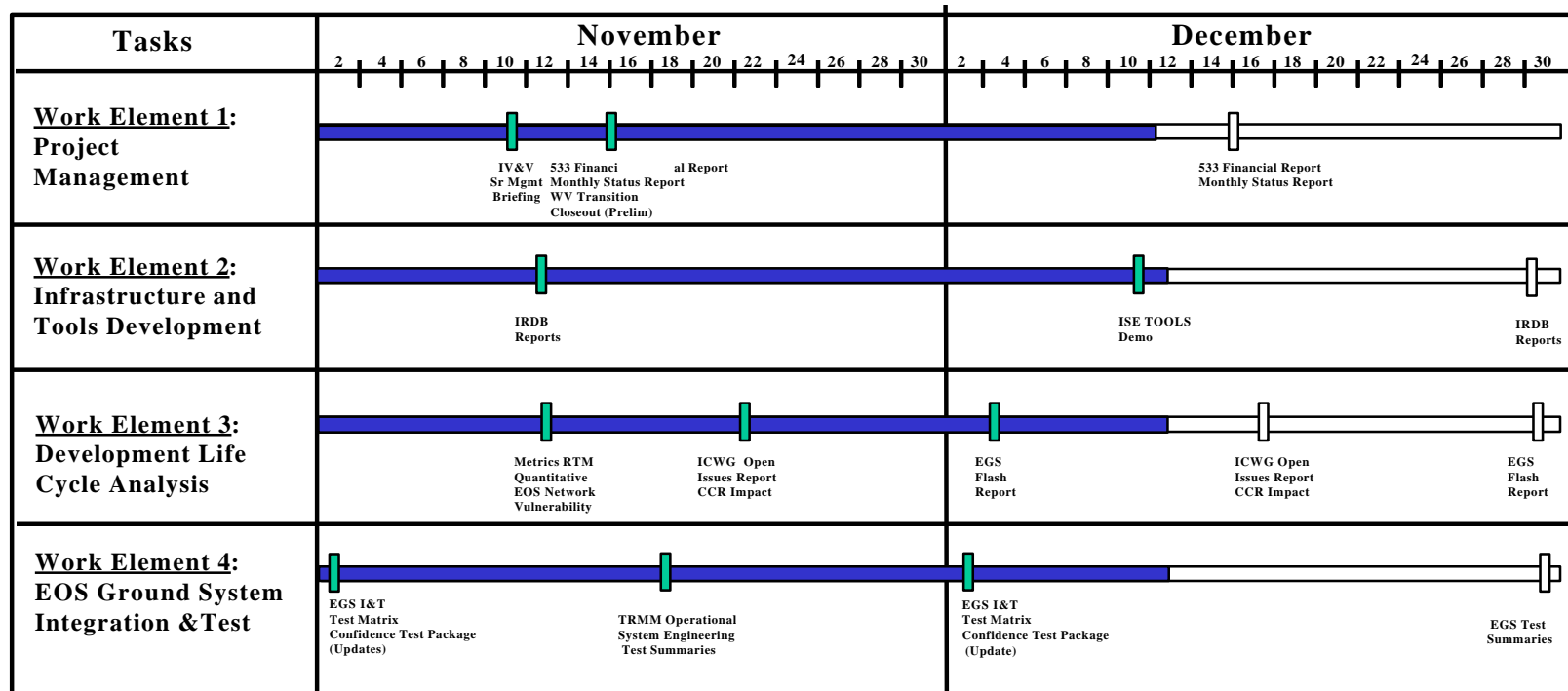
**EXHIBIT 1-1: EOSDIS IV&V Organization**

*EOSDIS IV&V Monthly Status Report  
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<b>Expected Date Due</b>	<b>Dependency</b>	<b>Milestone/Deliverable</b>	<b>Task #</b>	<b>Status*</b>	<b>Comments</b>
11/97	Periodic	IV&V Briefing to Sr. ESDIS Mgmt	WE-1	C	11/10/97
11/15/97	15 <sup>th</sup> of month	NASA Financial Mgmt Rpt 533M	WE-1	C	11/14/97
11/15/97		WV Transition Closeout Report	WE-1	C	11/15/97
11/97	RTM + 10 working days	Integrated Requirements Database (IRDB) Reports	WE-2	C	11/4/97
11/97	CCB or ICWG mtg - 1 week	CCR Impact Analysis Forms	WE-3	C	11/21/97
11/12/97	RTM + 10 working days	Metrics Report/RTM Quantitative Analysis	WE-3	C	11/12/97
11/97	On-site test + 10 working days	EOSDIS Network Vulnerability Assessment Report	WE-3	C	11/10/97
11/30/97	At monthly ICWG	ICWG Open Interface Issues Summary Report	WE-3	C	11/21/97
11/30/97	Monthly	November ECS Assessment/Flash Report	WE-3	C	12/04/97 (delayed with COTR cognizance)
11/97	Periodic	EGS I&T Program Test Package (Updates)	WE-4	C	11/3/97
11/97	Periodic	EGS I&T Program Test Matrix	WE-4	C	11/15/97
11/97	Periodic	TRMM Operational System Engineering Test Summaries	WE-4	C	11/18/97
		<b>December 1997</b>			
12/97	Periodic	IV&V Findings Review	WE-1	IP	sched 12/16/97
12/15/97	15 <sup>th</sup> of month	NASA Financial Mgmt Rpt 533M	WE-1	IP	
12/15/97	15 <sup>th</sup> of month	NASA Financial Mgmt Rpt 533Q	WE-1	IP	
12/97	RTM + 10 working days	Integrated Requirements Database (IRDB) Reports	WE-2	IP	
12/10/97		ISE Tools Demo	WE-2	C	12/08/97
		Review of Updated AT Test Procedures against Drop 1 Capabilities	WE-3	C	12/11/97
		McCabe Aided Analysis	WE-3	C	12/11/97
12/97	On-site test + 10 working days	EOSDIS Network Vulnerability Assessment Report	WE-3	IP	
12/97	CCB or ICWG mtg - 1 week	CCR Impact Analysis Forms	WE-3	IP	
12/97	At monthly ICWG	ICWG Open Interface Issues Summary Report	WE-3	IP	
1/5/98	Monthly	Dec. ECS Assessment/Flash Report	WE-3	IP	
12/97	Periodic	EGS I&T Program Test Matrix	WE-4	C	12/01/97
12/97	Periodic	EGS I&T Program Test Package (Updates)	WE-4	C	12/01/97
12/97	Periodic	EGS Test Summaries (e-mails)	WE-4	IP	

\* C = Completed, IP = In Process, O = Open, D = Delayed, CX = Canceled

**EXHIBIT 1-2: Status of Milestones/Deliverables**



**EXHIBIT 1-3: Master Milestone Chart**

### **1.3 Technical Task Information**

#### **Work Element #2 Infrastructure and Tool Development**

a) Task Accomplishments

- Prepared and posted Confidence Test Package documents to web page, updated the indexes, and deleted old versions.
- Set up temporary RTM project to verify the feasibility of a Version 3.7 export. Hughes will be providing RTM Version 3.7 exports in the future.
- Prepared and deployed minor modification to ARDB to automate metrics generation for case where requirements have #C appended to them and a release has not been assigned.
- Prepared metrics graphics for PITS browser web pages and posted them.
- Assisted JimFischer in configuring a new account on the Sun to run RTM.
- Imported new EDOS RTM project and transferred requirements to Sybase. Queried for impacts on TMDB threads and reported change impacts to affected authors.
- Prepared new version of SQLWindows transfer tool to move links to Sybase for newly received EDOS data.
- Modified IRDBApplet to access new EDOS data. Regression tested applet and deployed.
- Modified OrphanPopulator Java application to work with new EDOS data. Regression tested application and deployed.
- Placed the latest CTP test package documents on the EGS I&T web page with the usual sorting, deleting, and indexing.
- Made significant modifications to the TMDB source code and database schema in preparation for release of TMDB version 5.1. The changes were made while implementing the following enhancements:
  - \* Modifying the Test Case, Test Session Reporting, and the Test Procedures windows/forms to accommodate the elimination of the comma separated values. Two cross tables were created to store the requirements mapped to Test Cases and Test Procedures. Implemented and tested changes.
  - \* Modifying "Allocate All" buttons on the Procedures and Session Reporting screens to work off the revised table structure as a result of elimination of the comma separated requirement values.
- Continued M&O activities for the Project Issue Tracking System (PITS), Automated Requirements Database (ARDB), and Test Management Database (TMDB).
- Continued M&O activities for the EOSDIS IV&V Homepage, EGS I&T Homepage, and PITS WWW Browser Homepage.
- Performed general system administration activities such as backups, COTS maintenance, and hardware maintenance as required.

b) Issues/Concerns:

- None



c) Subcontractor Performance:

- EWA performance during this reporting period was excellent. Areas of performance include:
  - \* Maintenance and operations of the Test Management Database (TMDB)
  - \* Database maintenance and reporting

d) Planned Activities:

- Perform an EOSDIS IV&V tools demonstration at the NASA Software IV&V Facility on 12/10 (Deliverable 0425 - due date of 10 December).
- Continue to update the EOSDIS IV&V, EGS I&T, and the PITS WWW Browser homepages.
- Interface with element leads to determine any tooling needs or infrastructure changes that fall outside the current action plan.
- Install new RTM baselines as they are received. Produce related reports. Transfer data to ISE Sybasedatabases as required. Incorporate associated updates to the IRDB homepage.
- Continue support for database related report generation, maintenance, and data transfer.
- Continue to reconfigure IV&V databases, homepages, and tools as necessary to support EOSDIS IV&V and I&T activities.
- Update Data Management Database (DMDB) information as it is received.
- Continue support (refinement, development, and maintenance) for the ARDB, PITS, TVDB, and TMDB client/server tools.
- Perform system administration duties for both LANs, hardware and COTS software as required.

**Work Element #3 EOSDIS Development Life Cycle Analysis/System Engineering Support**

a) Task Accomplishments:

***Planning and Rapid Analysis Team:***

- ***Requirements Analysis:*** Completed quantitative analysis on the 10/28 ECS RTM requirements baseline from 10/28. The qualitative analysis was not performed on the 10/28 baseline per discussions with the COTR.
- ***Toolkit Testing:*** Completed and delivered Science Data Production (SDP) Toolkit Testing 5.2.1 TAM. The TAM provided an analysis of the testing effort and recommendations on specific improvements the testing process and the test themselves.

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- *Source Code* Worked with ECS to gain access to an ECS server to perform McCabe analysis. ECS is working with their internal security team to implement this request.
  - \* Developed a TAM which documents the results of McCabe analysis on a sample of code within the CLS subsystem.
  - \* Performed McCabe analysis of >5% of the code across all of the ECS subsystems and provided the information to the project.
- *Design Analysis*: Started review of the FOS design documentation and programmers manual.

***System and Interfaces Analysis Team:***

- *Requirements Analysis* Continued support on mapping between a set of EOSDIS Core System capabilities (defined by Hughes) and the ECS Requirements by Release. Started review of CSCs requirements-capability mapping.
- *Interface Analysis* Continued tracking of open interface issues and support to the Interface Control Working Group (ICWG).
  - \* Provided impact analysis comments on CSCs to interface documents.
  - \* Reviewed and provided comments on the following CSCs for November:

CCR #	Title	Date Rcvd	Delivery Date
505-41-40-008	Update, Add NCEP Products to GSFC DAAC ICD	10/23/97	11/10/97
505-41-44-001	Baseline the ECS-JPL DAAC ICD	10/23/97	11/10/97
505-01-35-074	Clarify EDOS-ASTER interface	10/27/97	11/13/97
505-01-35-075	Clarify DEDS & PVL for EDOS-ECS interface	10/27/97	11/13/97
505-42-01-013	New User Req., Delete Kerberos, Resolve TBDs	10/30/97	11/12/97
505-41-32-007	Make the ECS L7 ICD Consistent with Implementation of the I/F's	11/15/97	
505-01-30-017	Update the EGS Architecture Diagrams in ESDIS L2 Documents	11/15/97	
505-01-30-018	AM-1 Instrument Data Rate Update	11/15/97	
505-42-01-014	Update the LPS Output Files DFCB		
505-01-30-019	Add L7 On-Orbit Requirements to ESDIS L2 Documents	11/15/97	

***System Security Analysis Team:***

- Completed assessment of the Systems Software Branch of Missions Operations at Goddard. The report was delivered on 11/11 to the appropriate NASA officials for review and action.
- The update to the EOSDIS Security Policy and Guidelines document was approved.
- Working on development of the AM-1 assessment schedule.

***Test Analysis and Witnessing Team:***

- Received Updated ECS AT procedures from Glen Iona for IV&V review. The review will focus on the procedures maturity and the accuracy and completeness of the procedure mapping to capabilities. The initial review will focus on the GSFC Operational Scenario updates for Drop 1.

***ECS Assessment / Flash Report Team:***

- Submitted the sixth in a series of ECS Assessment/Flash Reports to ESDIS on 12/4. These reports provide ESDIS with an assessment of the ECS program and its potential impacts to EOSDIS. This report contains a summary of the detailed analysis of Toolkit Testing and SV/AT Testing as well as detailed findings in these and planned IV&V activities areas.
- Conducted a Findings Meeting with ESDIS Management on 11/10. This meeting highlighted IV&V findings and recommendations.

b) Issues/Concerns:

- ECS testing activities continue to experience schedule problems due to delays in development.
- IV&V has not been allowed to witness the SV Testing currently in-progress at ECS. As a result, independent analysis cannot be provided. In addition, it is not clear that IV&V will be allowed to witness AT testing in the future.
- KhondehPayne (ECS) has reported that many of the requirements engineers have been reassigned to work on the ECS Design Documentation. Intermetrics is concerned that the remaining requirements engineers will not be able to respond to documented TAM issues.

c) Subcontractor Performance:

- Orbital is leading the System and Interfaces Analysis Team. Their technical staff also supports other integrated analysis teams within Task 8. Their performance has been very good.

- SES is leading the Test Analysis and Witnessing Team. Their technical staff also supports other integrated analysis teams within Task 8. Their performance has been very good.

d) Planned Activities:

***Planning and Rapid Analysis Team:***

- Develop a TAM which highlights concerns in the Configuration Management area.
- Continue to conduct McCabe analysis on various portions of the ECS SDP software.
- Continue review of FOS documentation.
- Continue to work on metrics approach with Susan Sekira.

***System and Interfaces Analysis Team:***

- Support ongoing CCR reviews.
- Continue data entry into PITS ICWG repository and present at next ICWG status meeting.
- Complete Capability to RbR mapping task, prepare and deliver TAM to ESDIS.

***System Security Analysis Team:***

- Perform network vulnerability assessment on EBNet.
- Train additional staff on the SAFEsuite software.
- The E-NSAT team will continue preparations for upcoming assessment of AM-1.

***Test Analysis and Witnessing Team:***

- Continue to review ECS AT/SV test procedure and provide analysis results to ESDIS.

***ECS Assessment / Flash Report Team:***

- Attend follow-up to Findings Meeting with ESDIS Program Management in December.
- Monitor ECS progress through the next reporting period.

#### **Work Element #4 EOS Ground System Integration and Test**

a) Task Accomplishments:

***EGS Version 1 and Version 2 Test Planning:***

- **TRMM**
  - \* Participated in joint GSFC DAAC TRMM TSS - TSDIS post-launch testing planning.
  - \* Participated in joint LaRC TRMM LATIS post-launch test planning.
- **ASTER**
  - \* Held key role in ASTER Planning meetings in Japan from both Flight Ops (IST) and Science system testing (EGS 6 Instrument Ops test, ICT 14 EOS-ASTER GDS Interface test, EGS 9 Aster Science Ops test, ICT 11 EDOS - ASTER GDS test).
- **AM-1 Joint Test Program**
  - Working with pre-flight test team/AM-1 test coordination -- Supporting Michael Max in EOS Compatibility Test (ECT) series:
    - \* Providing meeting and coordination support.
    - \* Reorganized ECT3 into ECT "B" - "E" tests.
    - \* Drafting test timelines and test information sheets.
  - Working on **EGS 3/MOSS -2** -- Joint Mission Operations Science System & EGS AM-1 Daily Operations Confidence Test (Entire EGS Flight Operations & Science Certification :
    - \* Referred to as EGS 3 in the EGS I&T Program Plan.
- **Joint DAAC-EGS I&T Science System and Operation Certification Program**
  - Operations Working Group Joint DAAC-EGS test activities
    - \* Reviewed and obtained agreement with DAACs to combine EGS I&T Science/EGS certification and DAAC Operations Readiness certification test preparation and execution.
    - \* Agreed on approach as presented in the OWG. The approach is to use mission day-in-the life timeline charts as a common master planning tool for each DAAC, and then cross-reference EGS tests and DAAC ops procedures and tests; exercise to be shared by EGS I&T and DAACs .
  - Completed EGS I&T action items from DAAOW Group meeting:
    - \* Completed and reviewed EGS Science & Ops Certification Test "3 Days in the Life" Timelines for GSFC, EDC, LaRC and NSIDC DAACs.
    - \* Completed and reviewed (with DAACs) draft of joint DAAC-EGS I&T EGS Science & Ops Certification Process Document

(prior to and at Nov. 18 OWG meeting); obtained general consensus on test objectives, scope, test development approach, process, roles & responsibilities, milestones.

- \* Confirmed minimal changes except to add a post launch description for NSIDC – met OWG commitment to deliver 11/26.
- \* Distributed same document to GHunolt, J. Moses, M.Reph, S. Lambros, and ESDIS I&T managers for review.
- Continued to meet with DAAC Operations Reps at Operations Working Group meetings and telecons:
  - **LaRC**
    - \* Met on-site with LaRC on 11/3; agreed on approach for LaRC to review 604/605's and get instrument info. (LaRC has sent MISR)
    - \* EGS made timeline changes suggested by LaRC and sent them for review.
    - \* Met at GSFC on 11/18. Discussed contractual questions – e.g. Q. Can Intermetrics provide on-site test team? A. Yes, however funding would need to be identified. Referred LaRC to J. Smith, COTR.
  - **EDC**
    - \* Incorporated changes identified in 10/22 EDC site meeting during week of 11/17 (previously on hold due to ASTER Japan travel). Greg Stensaas J. Daucsavage, and Mike Benson agreed on basic strategy and approach to cert.
    - \* Confirmed agreement with Mike Benson week of 11/18 based on Mike's discussions with Lynn Oleson.
    - \* Completed ASTER review with EDC .
  - **GSFC**
    - \* Reviewed approach and compared timeline DAACs rehearsal scenario events with KHarnden.
    - \* Completed DAS/DAO interface review with GSFC.
    - \* Initiated work with G. Wade on ECS-EDOS Interface Testing using EGS I&T ICT3 test package.

- **NSIDC**
  - \* Confirmed approach and schedule with Vince Troisi. Drop 5 is to be used as the post-launch “bench mark” test for all of the DAACs which will keep NSIDC on same Certification development schedule as other DAACs because there is only a 2-3 month post-launch delay.
- **Supported IST Training session**
  - \* Answered questions in class.
  - \* Worked with instrument teams.
- **Participated in the following meetings:**
  - \* DAAC Managers meeting.
  - \* OWG Meetings & Telecons.
  - \* ESDIS Ops Readiness Replanning.
  - \* Flight Ops Test Planning Team.
  - \* EDOS TOG.
- **Met target date (11/3) to deliver updated EGS I&T confidence test packages**
  - \* 1112C (periodic), including DAAC comment incorporation.
- **Under ESDIS direction, coordinated with instrument teams:**
  - \* MODIS meeting to plan test data.
  - \* MISR coordination through LaRC DAAC.
  - \* ASTER.
- **Landsat 7 -- MRTT coordination**
  - \* Revised L-7 EGS I&T test plan,

***Integration Schedule Tracking and Analysis:***

- **Reviewed/revised EGS I&T schedule** to support ESDIS Ops Readiness Replan .
- **Monitored/revised FOS V2 test schedule** to reflect initial dry run FOS-EDOS-EbNET EGS level testing Sept-Dec. '97, formal EGS I&T testing on Dec. 17 version, and final regression testing on Feb. '98 patch release.

***Integration Test Tool Definition and Plans:***

- Updated Test Management Data base (TMDB) to include periodic EDOS requirements baseline update – used to review test package requirements map.
- Provided TMDB generated requirements map reports to ESDIS for ECS AT and EGS requirements trace reports.

***EGS Versions 1 and 2 Integration and Test Execution:***

- **Completed pre-launch TSS/TSDIS testing and LaTIS Test verification**
  - \* Completed EGS TRMM Operational System Engineering Test Summaries - final test report before launch (deliverable 1122 completed 11/18). Included intermediate and final assessments based on EGS testing, as well as participating in and witnessing GSFC and LaRC testing.
- **Continuing preliminary tests of FOS Release B with version 2.0.1.**
  - \* This version has limited capabilities with many open CRs.
  - \* More formal and intensive testing will begin with FOS 2.1.0 in December.
- **Initiated formal interface testing – ECS-EDOS** test package is ICT3 referenced in the EGS I&T test plan -- will be executed at GSFC with EDOS)
- **Supported TSS, LaTIS, TSDIS, FOS DRB, ETS DRB, EDOS in closing DRs.**

**b) Issues/Concerns**

- Latest ESDIS Test Replan impact on objectives and deliverables
- Schedule Issue -- Mission Certification date is May '98
  - \* Based on current schedule will need to execute test twice -- once for Mission Cert, and again, as a regression test after Science Cert is complete.

**c) Subcontractor Performance**

- Excellent.

**d) Planned Activities**

- Continue to lead EGS Science & Ops Certification Test Planning.
- Deliver 1112C EGS I&T Program Test Package (Updates).
- Continue L-7, AM-1, Sage III Mission joint test planning .
- Initiate ECS SDP on-site training at VATC and GSFC sites.
- Complete monthly metrics, matrix update and ongoing task support activities.



## **2. FINANCIAL/CONTRACTUAL INFORMATION**

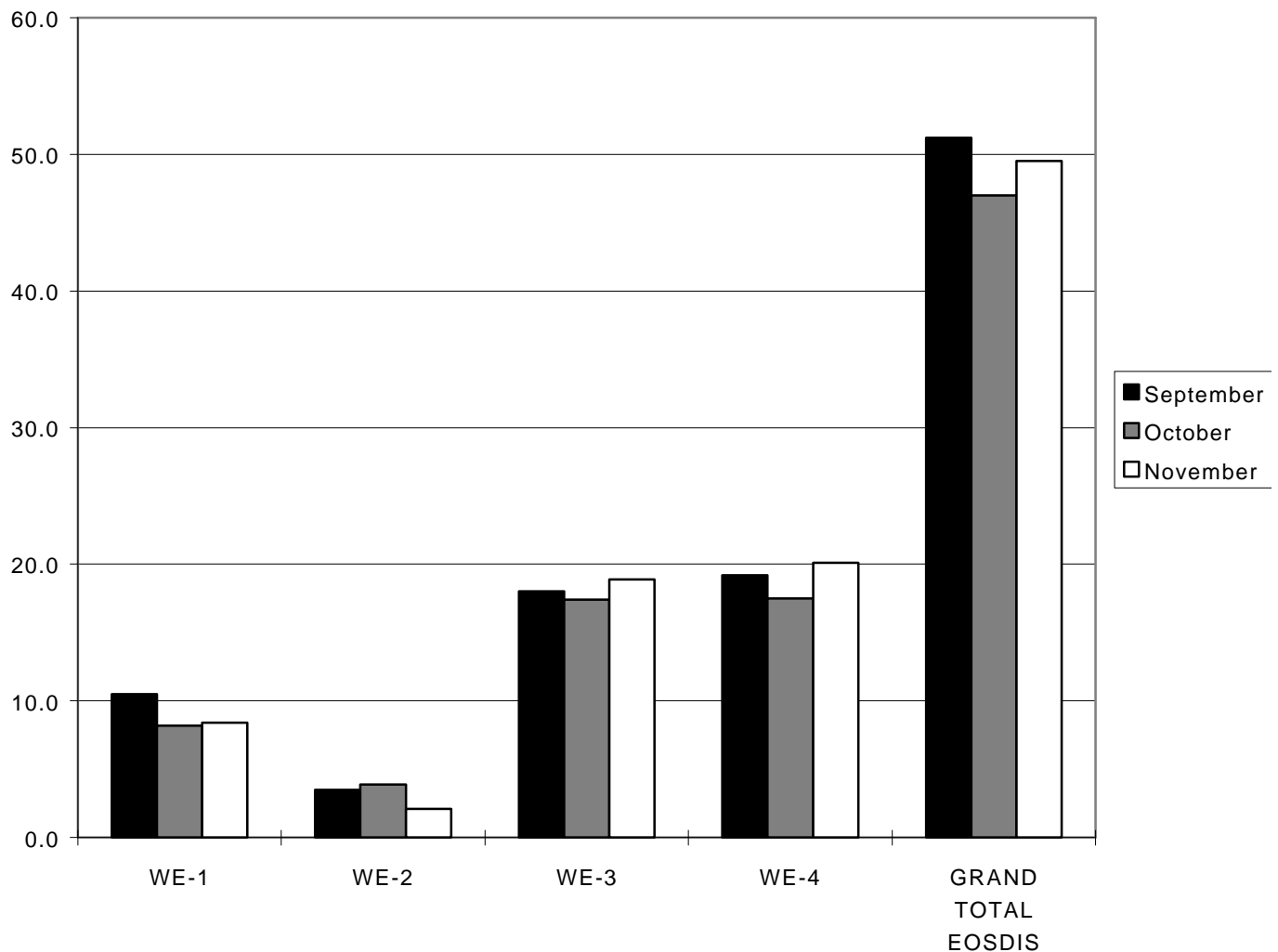
### **2.1 Average Direct Labor Rates**

(SUPPRESSED)

## 2.2 Staffing Profile

Exhibit 2-2 gives a summary view of the number of full-time equivalent employees on the EOSDIS IV&V contract. It provides the staffing profile by task for the previous month, current month, and next month (projected).

In terms of full-time equivalent staff members, the contract supported about 50 personnel in the month of November. The increase is the result of planned new-hires. In December we expect this number to increase to 53 due to employee return from medical leave and one new-hire.



**EXHIBIT 2-2: Summary Staffing Profile by Task and Total**

### **2.3 Financial/Contractual Related Issues**

- **PBC Contracting** - The contract modification relating to the extension of the current award fee period from 12/31/97 to 3/31/98 (9 months vs. 6 months) remains pending.
- **ECS SDP late delivery impact on PMP, WE-4 EGS I&T** The late delivery of the ECS SDP component has prevented the completion of the WE-4 EGS I&T Program Plan as referenced in the PMP. Formal contract redirection is pending.